



## PGA301-Q1 Pressure Sensor Signal Conditioner

### 1 Features

- Analog Features
  - Analog Front-End for Resistive Bridge Sensors
  - On-Chip Temperature Sensor
  - Programmable Gain
  - 16-Bit, 1-MHz Sigma-Delta Analog-to-Digital Converter for Signal Channel
  - 10-Bit Sigma-Delta Analog-to-Digital Converter for Temperature Channel
  - One 12-Bit DAC Outputs
- Digital Features
  - Compensation Equation
    - 2nd order Temperature Compensation
    - On-Chip Oscillator
  - Memory
    - 89 Bytes of EEPROM
- Peripheral Features
  - One-Wire Interface (OWI)
  - Software Watchdog Timer
  - Oscillator Watchdog
  - Power Management Control
  - Analog Low-Voltage Detect

### • General Features

- Automotive Temperature Range:  $-40^{\circ}\text{C}$  to  $125^{\circ}\text{C}$
- Power Supply: 4.5-V to 5.5-V Operational,  $-5.5\text{-V}$  to  $16\text{-V}$  Absolute Maximum
- Qualified in Accordance With AEC-Q100
- QFN-36 Package

### 2 Applications

- Resistive Pressure Sensor Signal Conditioning

### 3 Description

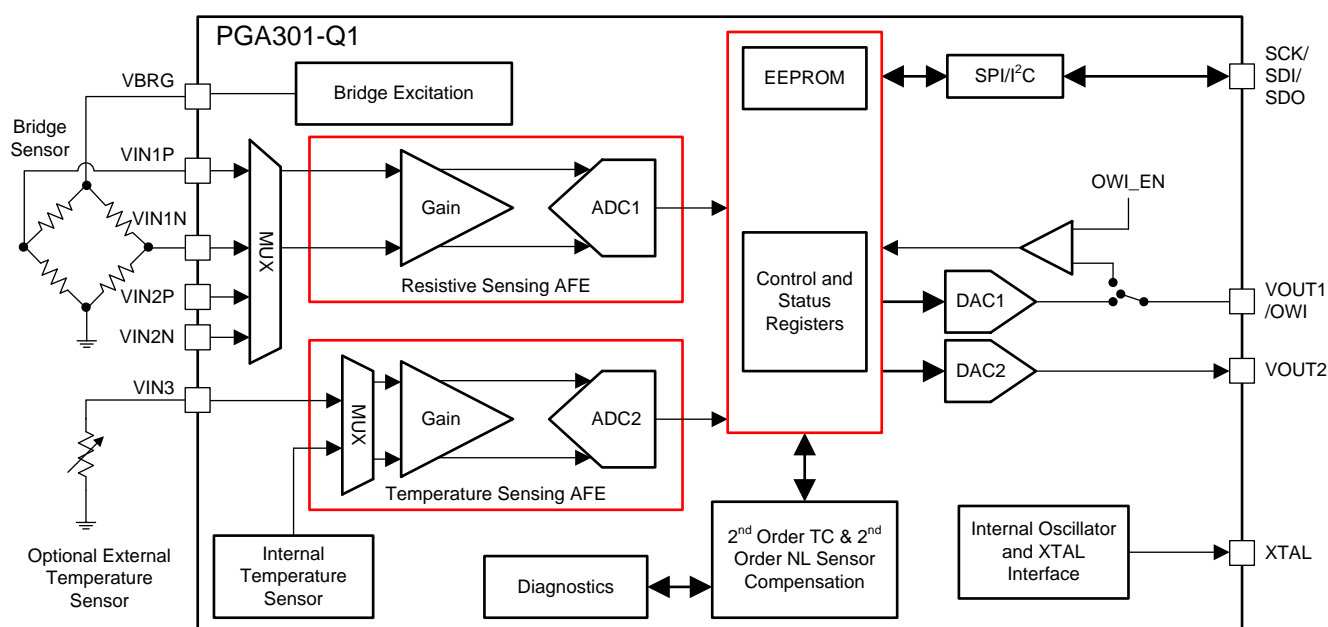
The PGA301-Q1 is an interface device for piezoresistive and strain gauge sense elements. The device incorporates the analog front end that directly connects to the sense element and has voltage regulators and oscillator. The device also includes sigma-delta analog-to-digital converter, 2nd order compensation and EEPROM memory. The PGA301-Q1 also includes one ratiometric voltage output.

#### Device Information<sup>(1)</sup>

PART NUMBER	PACKAGE	BODY SIZE (NOM)
PGA301QRHHRQ1	QFN (36)	6.00 × 6.00 mm

(1) For all available packages, see the orderable addendum at the end of the data sheet.

#### Functional Block Diagram



## 4 Device and Documentation Support

### 4.1 Community Resources

The following links connect to TI community resources. Linked contents are provided "AS IS" by the respective contributors. They do not constitute TI specifications and do not necessarily reflect TI's views; see TI's [Terms of Use](#).

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### 4.2 Trademarks

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### 4.3 Electrostatic Discharge Caution



These devices have limited built-in ESD protection. The leads should be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates.

### 4.4 Glossary

[SLYZ022](#) — *TI Glossary*.

This glossary lists and explains terms, acronyms, and definitions.

## 5 Mechanical, Packaging, and Orderable Information

The following pages include mechanical, packaging, and orderable information. This information is the most current data available for the designated devices. This data is subject to change without notice and revision of this document. For browser-based versions of this data sheet, refer to the left-hand navigation.

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### Applications

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